● PRINTER RUSH ●

(PTO ASSISTANCE)

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[RUSH] **MESSAGE:**

Pages 48 and 49 have holes through data on top of pages of specification

Please resolve.

[XRUSH] **RESPONSE:**

INITIALS:

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appropriate that a heat treatment at 300 ~ 450°C for 1 to 12 hours is carried out in an atmosphere containing hydrogen of 3 to 100%. Alternatively, also when a plasma hydrogenating method was used, the same effect is obtained. Here, at a position where a contact hole for connecting a pixel electrode to the drain wiring line is subsequently formed, an opening portion may be formed in the passivation film 3166.

[0235]

Thereafter, a third interlayer insulating film 3167 made of organic resin and having a thickness of about 1 μm is formed. As the organic resin, polyimide, acryl, polyamide, polyimideamide, BCB (benzocyclobutene) or the like can be used. As merits of using the organic resin film, there are cited a point that a film forming method is simple, a point that parasitic capacity can be reduced since relative dielectric constant is low, a point that excellent flatness is obtained, and the like. Note that an organic resin film other than those mentioned above, organic SiO compound, and the like can also be used. Here, polyimide of a type that is thermally polymerized after application to the substrate is used and fired at 300°C to form the film.

[0236]

Next, in the region to be a pixel portion, a shielding film 3168 is formed on the third interlayer insulating film 3167. Note that in this embodiment, the word "shielding film" is used to carry the meaning of shielding against light and electromagnetic waves.

[0237]

As the shielding film 3168, a film made of an element selected from aluminum (Al), titanium (Ti), and tantalum (Ta) or a film containing either one of those elements as its main ingredient is formed to have a thickness of 100 to 300 nm. In this embodiment, an aluminum film containing titanium of 1 wt% and having a thickness of 125 nm was formed.

[0238]

Note that when an insulating film made of a silicon oxide film or the like and having a thickness of 5 to 50 nm is formed

on the third interlayer insulating film 3167, it is possible to improve the adhesiveness of the shielding film formed thereon. Besides, when a plasma treatment using a CF_4 gas is applied to the surface of the third interlayer insulating film 3167 formed of organic resin, it is possible to improve the adhesiveness of the shielding film formed on the film owing to surface reforming.

[0239]

It is also possible to form not only the shielding film but other connection wiring lines by using the aluminum film containing titanium. For example, connecting wiring lines for connecting circuits in the driver circuit can be formed. However, in that case, it is necessary to form a contact hole in the third interlayer insulating film prior to film formation with a raw material for forming the shielding film or the connecting wiring line.

[0240]

Next, an oxide 3169 with a thickness of 20 to 100 nm (preferably 30 to 50 nm) is formed on the surface of the shielding film 3168 by an anodic oxidation method or a plasma oxidation method (in this embodiment, anodic oxidation method). In this embodiment, since the film mainly containing aluminum is used as the shielding film 3168, an aluminum oxide film (alumina film) is formed as the anodic oxide 3169.

[0241]

At this anodic oxidation treatment, an ethylene glycol tartrate solution with a sufficiently low alkaline ion concentration is prepared. This is a mixture solution in which an ammonium tartrate aqueous solution of 15% and ethylene glycol are mixed at 2:8, and ammonia water is added to this solution to make adjustment so that pH becomes 7 ± 0.5. Then a platinum electrode as a cathode is provided in this solution, the substrate on which the shielding film 3168 is formed is immersed in the solution, and a constant (several mA to several tens mA) direct current is made to flow with the shielding film 3168 as an anode.

[0242]

Although a voltage between the cathode and the anode in the